Table I. Our results on the various surface modifications of elastomers.

Static Diffusion Test Results (conducted at GeoMet Inc., MD)

Sample Identification		Type	Run #	Observed Endpoint (min)
HD SAMPLES				
027-076-01	Butyl	Control	HD Run #1	565
027-076-01	Butyl	Control	HD Run #1	595
027-076-01	Butyl	Control	HD Run #1	625
027-076-02	Butyl, Diesel Exposed	Control	HD Run #1	295
027-076-02	Butyl, Diesel Exposed	Control	HD Run #1	250
027-076-02	Butyl, Diesel Exposed	Control	HD Run #1	385
027-076-03	Natural	Control	HD Run #2	185
027-076-03	Natural	Control	HD Run #2	170
027-076-03	Natural	Control	HD Run #2	170
027-076-04	Neoprene	Control	HD Run #2	180
027-076-04	Neoprene	Control	HD Run #2	130
027-076-04	Neoprene	Control	HD Run #2	150
027-076-05	Nitrile	Control	HD Run #2	120
027-076-05	Nitrile	Control	HD Run #2	125
027-076-05	Nitrile	Control	HD Run #2	120
027-076-06	Silicone	Control	HD Run #2	< 5
027-076-06	Silicone	Control	HD Run #2	< 5
027-076-06	Silicone	Control	HD Run #2	< 5
027-076-14	Natural	FC Coated	HD Run #2	305
027-076-14	Natural	FC Coated	HD Run #2	> 2410
027-076-14	Natural	FC Coated	HD Run #2	> 2410
027-076-15	Neoprene	FC Coated	HD Run #2	400
027-076-15	Neoprene	FC Coated	HD Run #2	290
027-076-15	Neoprene	FC Coated	HD Run #2	290
027-076-16	Nitrile	FC Coated	HD Run #2	230
027-076-16	Nitrile	FC Coated	HD Run #2	260
027-076-16	Nitrile	FC Coated	HD Run #2	2190
027-076-17	Silicone	FC Coated	HD Run #2	55
027-076-17	Silicone	FC Coated	HD Run #2	45
027-076-17	Silicone	FC Coated	HD Run #2	55
027-076-08	Butyl	RF Plasma Treated	HD Run #1	870
027-076-08	Butyl	RF Plasma Treated	HD Run #1	765
027-076-08	Butyl	RF Plasma Treated	HD Run #1	555
027-076-09	Butyl	PVA Coated	HD Run #1	1985
027-076-09	Butyl	PVA Coated	HD Run #1	1870
027-076-09	Butyl	PVA Coated	HD Run #1	1590
027-076-12	Butyl, *Adjacent to HD leak	FC Coated	HD Run #1	555
027-076-12	Butyl, *HD leaked	FC Coated	HD Run #1	375
027-076-12	Butyl	FC Coated	HD Run #1	1590
027-076-13	Butyl	SARC	HD Run #1	870
027-076-13	Butyl	SARC	HD Run #1	840
027-076-13	Butyl	SARC	HD Run #1	760
027-076-10	Butyl, Diesel Exposed **Adj.	PVA Coated	HD Run #1	975
027-076-10	Butyl, Diesel Exposed **L	PVA Coated	HD Run #1	500
027-076-10	Butyl, Diesel Exposed	PVA Coated	HD Run #1	> 2410
027-076-11	Butyl, Diesel Exposed	FC Coated	HD Run #1	850
027-076-11	Butyl, Diesel Exposed **L	FC Coated	HD Run #1	385
027-076-11	Butyl, Diesel Exposed	FC Coated	HD Run #1	365
GB SAMPLES				
027-076-07	Viton	Control	GB Run #1	235
027-076-07	Viton	Control	GB Run #1	235
027-076-07	Viton	Control	GB Run #1	235
027-076-18	Viton	FC Coated	GB Run #1	235
027-076-18	Viton	FC Coated	GB Run #1	235
027-076-18	Viton	FC Coated	GB Run #1	235
027-076-19	Viton	PVA Coated	GB Run #1	825
027-076-19	Viton	PVA Coated	GB Run #1	415
027-076-19	Viton	PVA Coated	GB Run #1	305

FC = fluorocarbon; PVA = polyvinyl alcohol; SARC = silicone abrasion resistant coating. All PVA, SARC and FC coated samples were post treated with RF plasma (air – 100-200 mTorr). medium power, 30 minutes.

Diesel Exposure = Diesel fuel applied with Q-tip. Samples stay in hood 10 minutes. Samples blotted dry and tested immediately.

* = In HD Run #1, some coated samples were difficult to keep sealed, due to the "slickness" of the coating. Sample ID "027-076-12" had an HD leak around the outside of the sample, generating an artificially shortened endpoint time for this sample and for the adjacent sample.

** = In HD Run #1, the diesel fuel "ate" the wax seal from around the felt washer. This resulted in some samples leaking HD around the outside of the sample, generating an artificially shortened endpoint time for the samples and for some adjacent samples (Adj. = Adjacent to leaking samples; L = Leaking sample).

Note: The samples in HD Run #2 were [illegible]